



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4**

Science and Ecosystem Support Division
Enforcement and Investigations Branch
980 College Station Road
Athens, Georgia 30605-2720

May 31, 2013

4SESD-EIB

MEMORANDUM

SUBJECT: Sampling Investigation Report for Hollingsworth Solderless Terminal Company
700 NW 57th Place Fort Lauderdale, FL
SESD Project # 13-0281

FROM: Jairo Castillo, PE, Environmental Engineer
Enforcement Section

A handwritten signature in blue ink that reads "Jairo Castillo".

THRU: Mike Bowden, Chief
Enforcement Section

A handwritten signature in blue ink that reads "Mike Bowden".

TO: Galo Jackson, RPM
Superfund Division

Attached is the Sampling Investigation Report for the Hollingsworth Solderless Terminal Company that was conducted on April 2, 2013 in Fort Lauderdale, FL. Should you have any questions or comments please call us at (706) 355-8621, or email me at castillo.jairo@epa.gov.

Attachment

United States Environmental Protection Agency
Region 4

Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720



Sampling Investigation Report
Hollingsworth Solderless Terminal Company
SESD Project Identification Number: 13-0281

Conducted at
700 NW 57th Place (Industrial Complex)
Ft. Lauderdale, Florida

Investigation Conducted on April 2, 2013

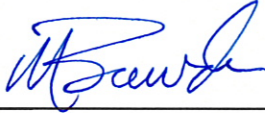
Requestor: Galo Jackson, RPM
Region 4 Superfund Division
61 Forsyth St. SW
Atlanta, GA 30303-8960

SESD Project Leader: Jairo Castillo, PE
Enforcement Section
980 College Station Road
Athens, Georgia 30605-2720

Title and Approval Sheet

Title: Hollingsworth Solderless Terminal Company Sampling Investigation Report
Fort Lauderdale, Florida

Approving Official:

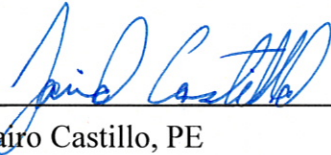


Mike Bowden, Chief
Enforcement Section
Enforcement Investigations Branch

5/31/13

Date

SESD Project Leader:



Jairo Castillo, PE
Enforcement Section
Enforcement Investigations Branch

5-31-2013

Date

**SAMPLING INVESTIGATION REPORT
HOLLINGSWORTH SOLDERLESS TERMINAL COMPANY
SESD PROJECT NO. 13-0281
APRIL 2, 2013**

BACKGROUND

On April 2, 2013 representatives of the US EPA Region 4 Science and Ecosystem Support Division (SESD) conducted a sampling investigation at the Hollingsworth Solderless Terminal site in Ft. Lauderdale, Florida. The investigation was requested by Galo Jackson, Remedial Project Manager, Region 4 Superfund Division. The following personnel participated in the sampling investigation:

PERSONNEL	ORGANIZATION	RESPONSIBILITY
Jairo Castillo	SESD	Project Leader/Safety Officer
Donald Fortson	ESAT	Sampling, Custody

The Hollingsworth Solderless Terminal Company (HSTC) site is located on 3.5 acres in an industrial/residential area of Ft. Lauderdale, Florida. The site is occupied by two buildings separated by NW 57th Place. The plant operated from 1968 to 1982 as a solderless terminal manufacturing facility. The manufacturing process included the use of molten salt baths, degreasing parts and electroplating. The wash and process waters, which contained high concentrations of trichloroethylene (TCE) and heavy metals, were disposed in numerous on-site drainfields, by surface discharges, and in a 100-foot-deep injection well located on site.

An In-situ Enhanced Bioremediation (ISEB) treatability pilot study was conducted from April 2005 to September 2007. The results of the ISEB pilot study suggested that this method would be an alternative to reduce the amount of remaining volatile organic compound (VOC) concentrations in groundwater to levels that are protective of human health and the environment within a reasonable timeframe. Nineteen wells were sampled in November 2010 by SESD personnel to provide data to determine if additional substrate was needed to reduce the VOC concentrations below the required levels. The Remediation Target Levels are provided in **Table 1**.

The results of the November 2010 showed three wells (PMW-1, PMW-3, and RW-2) were very close to the remediation goals. The RPM requested that these three wells be resampled and analyzed for VOCs in January 2012 by SESD personnel. Analytical data showed that trichloroethylene (TCE) and cis-1,2-dichloroethylene (DCE) were below the target levels in all three samples. Vinyl chloride (VC) was detected in concentrations greater than the Maximum Contaminant Level (MCL) and Clean Up Goal, but less than Florida Natural Attenuation Default Criteria (FL NADC) for all three samples. The RPM requested the sampling of wells PMW-1, PMW-3, RW-2, plus the addition of RW-1, to be analyzed for TCE, DCE, and VC to assess the current level of contaminants.

The results will be discussed in this report and will be compared to the target levels provided in **Table 2**.

Table 1: Remediation Target Levels

Groundwater COC	MCL (ug/L)	Clean Up Goal (ug/L)	FL NADC (ug/L)
Trichloroethylene (TCE)	5.0	3.0	300
cis-1,2-Dichloroethylene (DCE)	70	70	700
Vinyl Chloride (VC)	2.0	1.0	100

SUMMARY

Table 2 shows the analytical results for volatile organic compounds. TCE was not detected and DCE concentrations were below target levels in all four samples (PMW-1, PMW-3, RW-1, and RW-2). Vinyl chloride was detected below MCL and FL NADC target levels but above its Clean Up Goal level in sample RW-1. For samples PMW-1, PMW-3, and RW-2, vinyl chloride was detected in concentrations greater than the MCL of 2.0 ug/L and Clean Up Goal target level of 1.0 ug/L, but less than the FL NADC of 100 ug/L. Vinyl chloride was detected in sample PMW-1 at 6.8 ug/L, in sample PMW-3 at 4.5 ug/L and sample RW-2 at 48 ug/L. Also, sample RW-1 contained 1.3 ug/L of vinyl chloride which is above the Clean Up Goal target level.

Table 3 lists the field parameter data for each well sampled along with the data from January 2012. Some of the field parameters from the April 2013 sampling event differed from the January 2012 sampling event. PMW-1 and PMW-3 wells conductivity and turbidity field parameters were consistent between the two events, but pH measurements were higher than the previous event. RW-2 pH field parameters were consistent between the two events, but the conductivity was lower and turbidity was higher compared to the previous sampling event. **Table 2** contains the analytical results compared to the aforementioned target levels. All analytical data sheets from the SESD laboratory are attached as **Appendix A**. Field Logbooks are attached as **Appendix B**.

Table 2: Volatile Organic Compound Analytical Results

Station ID		PMW-1	PMW-3	RW-1	RW-2	RW-2			
Sample ID		PMW1-0413	PMW3-0413	RW1-0413	RW2-0413	RW2D-0413			
Sample Date		04/02/2013	04/02/2013	04/02/2013	04/02/2013	04/02/2013			
Sample Time		14:15	12:15	15:01	10:51	10:51			
Analyte	Units						MCL (ug/L)	Clean Up Goal (ug/L)	FL NADC (ug/L)
cis-1,2-Dichloroethylene (DCE)	ug/L	7.2	2.7	1.0	14	15	70	70	700
Trichloroethylene (TCE)	ug/L	0.50 U	0.50 U	0.50 U	0.50U	0.50U	5.0	3.0	300
Vinyl Chloride (VC)	ug/L	6.8	4.5	1.3	48	50	2.0	1.0	100

U the analyte was not detected at or above the reporting limit.

Table 3: Field Parameter Data

MW ID	TD BLS (ft)	Water Level (ft)	pH	Spec Cond	Temp °C	Turbidity NTU	Comments
RW-1 (04/2013)	-	3.6	6.88	383	29.0	25.2	3.0 gallons purged
RW-1 (01/2012)	-	-	-	-	-	-	Not Sampled
RW-2 (04/2013)	36	3.18	6.77	267	28.5	28.5	4.55 gallons purged
RW-2 (01/2012)	36	2.90	6.96	413	28.6	3.10	3 gallons purged
PMW-1 (04/2013)	30	4.02	5.84	254	29.0	55.3	3.75 gallons purged
PMW-1 (01/2012)	30	3.72	3.72	300	29.5	61.2	3.25 gallons purged
PMW-3 (04/2013)	30	4.01	6.07	250	28.7	50.7	2.75 gallons purged
PMW-3 (01/2012)	30	3.70	3.70	272	28.9	64.4	3.5 gallons purged

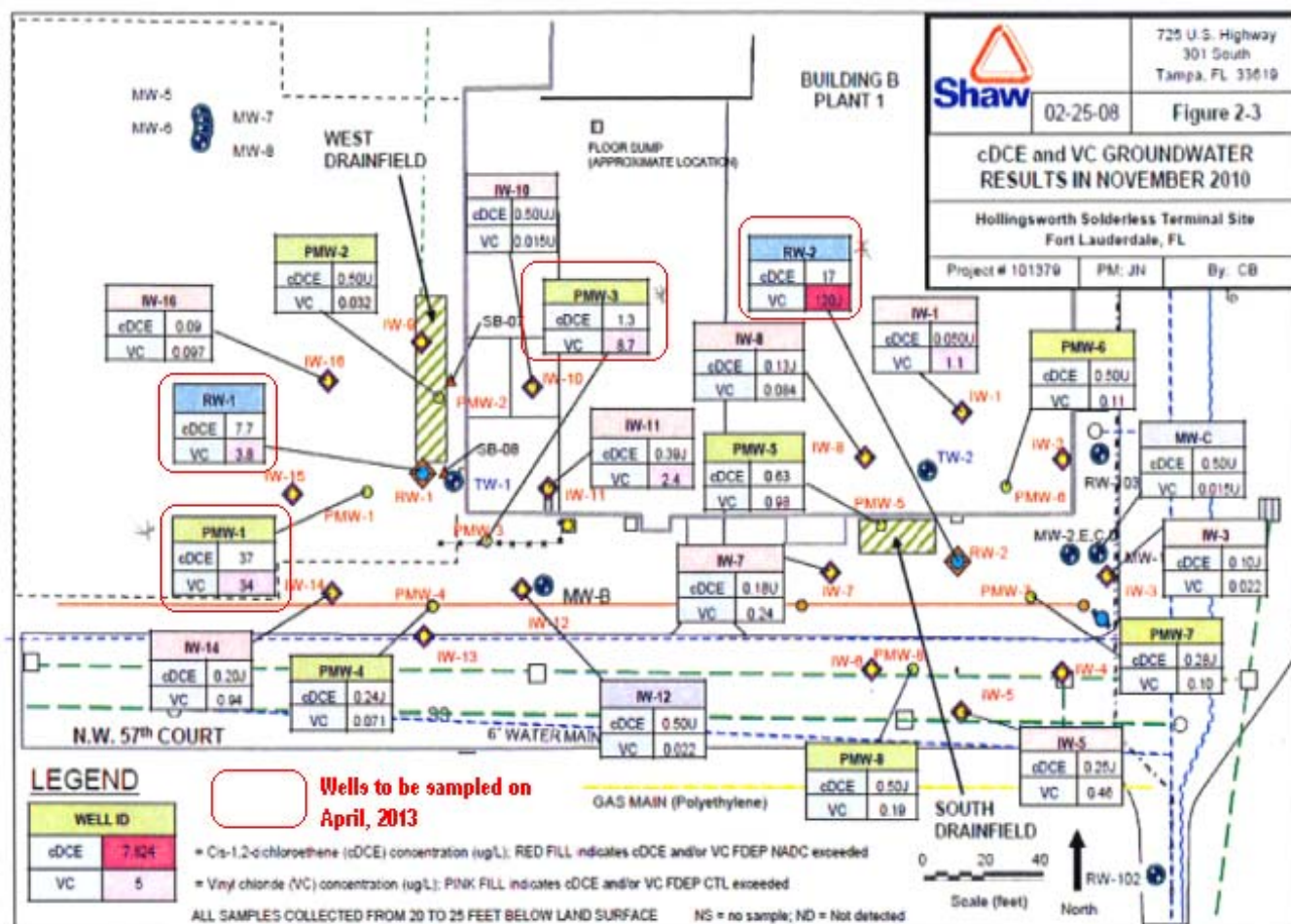
INVESTIGATION DETAILS

The wells were sampled using a low flow purging technique (purging at a rate equal to or less than the recharge rate of the aquifer for the particular well). The sample tubing was placed at 20' below the top of the casing just as it was for the sampling events in September 2006, May 2010, November 2010, and January 2012.

The samples were collected in un-preserved 40 ml vials due to a history of effervescence when the groundwater came in contact with the hydrochloric acid preservative. The samples were analyzed for TCE, DCE, and vinyl chloride. See **Figure 1** for the wells locations and site map which was generated by Shaw Environmental.

Figure 1: Samples Locations on Hollingsworth Solderless Terminal Site

E-mail: jackson.galo@epa.gov



METHODOLOGY

Field activities were conducted in accordance with SESD's Management and Quality Systems Procedures and the following field measurement and sampling procedures:

Field pH Measurement	SESDPROC-100-R3
Field Specific Conductance	SESDPROC-101-R5
Field Temperature Measurement	SESDPROC-102-R3
Field Turbidity Measurement	SESDPROC-103-R3
Groundwater Level and Well Depth	SESDPROC-105-R2
Pump Operation	SESDPROC-203-R2
Field Equipment Cleaning and Decon	SESDPROC-205-R2
Groundwater Sampling	SESDPROC-301-R2

All field measurements and sampling procedures were performed by SESD's Enforcement and Investigations Branch personnel. Chain of Custody documentation was prepared by Donald Fortson and reviewed and signed by Jairo Castillo.

Samples were analyzed at the SESD laboratory in accordance with the Analytical Support Branch (ASB) Laboratory Operations and Quality Assurance Manual, February, 2013 Version. The ASB laboratory is accredited by the ANSI-ASQ National Accreditation Board/ACCLASS for ISO/IEC 17025. EPA analytical method 8260C Volatile Organics was used for the analysis.

FIELD QUALITY CONTROL

One duplicate groundwater sample was collected and analyzed. The analytical results for sample RW2-0413 and its duplicate are provided in **Table 2**. The results correlate very well which indicates proper sampling, handling, and analytical techniques.

A trip blank for volatile organics, TB01-0413, was prepared by the SESD laboratory to accompany the samples from the field to the laboratory. The trip blank contained no analytes at or above the reporting limit.

CONCLUSION

The analytical results from this sampling event will be reviewed by the EPA Remedial Project Manager to determine the next course of action for the site.

Appendix A

Analytical Data Sheets

<u>Analytical Parameters</u>	<u>Matrix</u>	<u>Method</u>	<u>Pages</u>
Volatile Organics	Groundwater	EPA 8260C	12

Appendix B

Copy of Field Logbook

Logbook 1 of 1

12



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 13-0281
Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

April 12, 2013

4SESD-ASB

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 13-0281, Hollingsworth Solderless
Superfund Remedial

FROM: Kristin Trapp
OCS Chemist

THRU: Sallie Hale, Chief
ASB Organic Chemistry Section

TO: Jairo Castillo

Attached are the final results for the analytical groups listed below. These analyses were performed in accordance with the Analytical Support Branch's (ASB) Laboratory Operations and Quality Assurance Manual (ASB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the ASB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Section 5.2 of the ASB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:

Method Used:

Accreditations:

Volatile Organics (VOA)

Volatile organic compounds

EPA 8260C (Water)

ISO



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Sample Disposal Policy

Because of the laboratory's limited space for long term sample storage, our policy is to dispose of samples on a periodic schedule. Please note that within 60 days of this memo, the original samples and all sample extracts and/or sample digestates will be disposed of in accordance with applicable regulations. The 60-day sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time if you have a special project need. If you wish for the laboratory to hold samples beyond the 60-day period, please contact our Sample Control Coordinator, Debbie Colquitt, by e-mail at Colquitt.Debbie@epa.gov, and provide a reason for holding samples beyond 60 days

cc: Nardina Turner



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D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

SAMPLES INCLUDED IN THIS REPORT

Project: 13-0281, Hollingsworth Solderless

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
TB01-0413	E131405-01	Trip Blank - Water	4/2/13 15:05	4/4/13 8:46
PMW1-0413	E131405-02	Groundwater	4/2/13 14:15	4/4/13 8:46
PMW3-0413	E131405-03	Groundwater	4/2/13 12:15	4/4/13 8:46
RW1-0413	E131405-04	Groundwater	4/2/13 15:01	4/4/13 8:46
RW2-0413	E131405-05	Groundwater	4/2/13 10:51	4/4/13 8:46
RW2D-0413	E131405-06	Groundwater	4/2/13 10:51	4/4/13 8:46



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DATA QUALIFIER DEFINITIONS

U The analyte was not detected at or above the reporting limit.

ACRONYMS AND ABBREVIATIONS

CAS	Chemical Abstracts Service Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.
ISO	The test, if analyzed after June 26, 2012, is accredited under the EPA Region 4 ASB's ISO/IEC 17025 accreditation issued by ANSI-ASQ National Accreditation Board/ACLASS. Refer to certificate and scope of accreditation AT-1691.
MDL	Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.
MRL	Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.
TIC	Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.



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D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: TB01-0413

Lab ID: E131405-01

Station ID:

Matrix: Trip Blank - Water

Date Collected: 4/2/13 15:05

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
156-59-2	cis-1,2-Dichloroethene	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 16:43	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 16:43	EPA 8260C
75-01-4	Vinyl chloride	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 16:43	EPA 8260C



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D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: PMW1-0413

Lab ID: E131405-02

Station ID: PMW-1

Matrix: Groundwater

Date Collected: 4/2/13 14:15

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
156-59-2	cis-1,2-Dichloroethene	7.2		ug/L	0.50	4/04/13 11:11	4/04/13 17:09	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 17:09	EPA 8260C
75-01-4	Vinyl chloride	6.8		ug/L	0.50	4/04/13 11:11	4/04/13 17:09	EPA 8260C



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Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: PMW3-0413

Lab ID: E131405-03

Station ID: PMW-3

Matrix: Groundwater

Date Collected: 4/2/13 12:15

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
156-59-2	cis-1,2-Dichloroethene	2.7		ug/L	0.50	4/04/13 11:11	4/04/13 17:34	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 17:34	EPA 8260C
75-01-4	Vinyl chloride	4.5		ug/L	0.50	4/04/13 11:11	4/04/13 17:34	EPA 8260C



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Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: RW1-0413

Lab ID: E131405-04

Station ID: RW-1

Matrix: Groundwater

Date Collected: 4/2/13 15:01

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
156-59-2	cis-1,2-Dichloroethene	1.0		ug/L	0.50	4/04/13 11:11	4/04/13 17:59	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 17:59	EPA 8260C
75-01-4	Vinyl chloride	1.3		ug/L	0.50	4/04/13 11:11	4/04/13 17:59	EPA 8260C



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Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: RW2-0413

Lab ID: E131405-05

Station ID: RW-2

Matrix: Groundwater

Date Collected: 4/2/13 10:51

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
156-59-2	cis-1,2-Dichloroethene	14		ug/L	0.50	4/04/13 11:11	4/04/13 18:24	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 18:24	EPA 8260C
75-01-4	Vinyl chloride	48		ug/L	0.50	4/04/13 11:11	4/04/13 18:24	EPA 8260C



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Volatile Organics

Project: 13-0281, Hollingsworth Solderless

Sample ID: RW2D-0413

Lab ID: E131405-06

Station ID: RW-2

Matrix: Groundwater

Date Collected: 4/2/13 10:51

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
156-59-2	cis-1,2-Dichloroethene	15		ug/L	0.50	4/04/13 11:11	4/04/13 18:49	EPA 8260C
79-01-6	Trichloroethene (Trichloroethylene)	0.50	U	ug/L	0.50	4/04/13 11:11	4/04/13 18:49	EPA 8260C
75-01-4	Vinyl chloride	50		ug/L	0.50	4/04/13 11:11	4/04/13 18:49	EPA 8260C



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Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Volatile Organics (VOA) - Quality Control

US-EPA, Region 4, SESD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch 1304020 - V 5030B VOA Wtr Prep

Blank (1304020-BLK2)

Prepared & Analyzed: 04/04/13

EPA 8260C

Vinyl chloride	U	0.50	ug/L							U
cis-1,2-Dichloroethene	U	0.50	"							U
Trichloroethene (Trichloroethylene)	U	0.50	"							U

LCS (1304020-BS1)

Prepared & Analyzed: 04/04/13

EPA 8260C

Vinyl chloride	17.480		ug/L	20.000		87.4	78.8-115
cis-1,2-Dichloroethene	21.100		"	20.000		106	87.6-115
Trichloroethene (Trichloroethylene)	19.640		"	20.000		98.2	87.8-114

MRL Verification (1304020-PS1)

Prepared & Analyzed: 04/04/13

EPA 8260C

Vinyl chloride	1.8600		ug/L	2.0000		93.0	58.8-135
cis-1,2-Dichloroethene	1.9800		"	2.0000		99.0	67.6-135
Trichloroethene (Trichloroethylene)	1.9600		"	2.0000		98.0	67.8-134



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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D.A.R.T. Id: 13-0281

Project: 13-0281, Hollingsworth Solderless - Reported by Kristin Trapp

Notes and Definitions for QC Samples

U The analyte was not detected at or above the reporting limit.

United States Environmental Protection Agency

Region 4

Science and Ecosystem Support Division

980 College Station Road

Athens, Georgia 30605-2720



PROJECT NAME:

Hollingsworth Solderless Terminal

PROJECT LOCATION:

700 57th place in Ft. Lauderdale, FL

PROJECT ID NUMBER:

13-0284

PROJECT LEADER:

Jarro Castillo

FIELD SAMPLING AND MEASUREMENT LOGBOOK

Book 1 of 1

Inclusive Dates: 4-2-2013

List of personnel in logbook:

Name	Initials	Organization/Duties
<u>Jarro Castillo</u>	<u>JC</u>	<u>EPA</u> , Team Leader
<u>Doris Fortson</u>	<u>DF</u>	<u>ESAT/CAI, sampling</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

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Instrument Calibration Log

Instrument 4 STAR (pH, SC, Turbidity, Temperature) SESD ID No 100907-10 Calibrator's Init. DF
 Instrument 2100 Q (pH, SC, Turbidity, Temperature) SESD ID No 090310-06 DF
 Instrument 4 STAR (pH, SC, Turbidity, Temperature) SESD ID No 100907-02 DF
 Instrument — (pH, SC, Turbidity, Temperature) SESD ID No —

Calibration: Date 4-12-13 Time 0800

pH 4 Std. Manufacturer:	<u>DAKTON</u>	Lot#	<u>PSID</u>	Expiration:	<u>8/13</u>
pH 7 Std. Manufacturer:	<u>DAKTON</u>	Lot#	<u>PAIC</u>	Expiration:	<u>10/13</u>
pH 10 Std. Manufacturer:	<u>DAKTON</u>	Lot#	<u>PSIA</u>	Expiration:	<u>8/13</u>
Spec Conductivity Low Std.	<u>1413</u> $\mu\text{S}/\text{cm}$	Manufacturer	<u>Thermo</u>	Lot #	<u>PO1A</u> , Exp. <u>12/13</u>
Spec Conductivity High Std.	<u>—</u> $\mu\text{S}/\text{cm}$	Manufacturer	<u>—</u>	Lot #	<u>—</u> , Exp. <u>—</u>
Turbidity Low Std. Manufacturer	<u>HACH</u>	Lot #	<u>A2086</u>	Calibration Due:	<u>3/13</u>
Turbidity Mid Std. Manufacturer	<u>HACH</u>	Lot #	<u>A2074</u>	Calibration Due:	<u>3/13</u>
Turbidity High Std. Manufacturer	<u>HACH</u>	Lot #	<u>A2080</u>	Calibration Due:	<u>3/13</u>
NIST Thermometer:	<u>080811-01</u>	Calibration Due:	<u>8-16-13</u>		

Pre-calibration readings:

pH: 4 = 4.12 3.91 Spec. Cond.: 1413 $\mu\text{S}/\text{cm}$ = 1451 $\mu\text{S}/\text{cm}$ 1440
 7 = 7.38 6.89
 10 = 10.47 9.88

Turbidity: Low: 10 NTUs = 9.82 NTUs DI = 0.09
 Mid: 100 NTUs = 98.8 NTUs
 High: 800 NTUs = 802 NTUs

Temperature: NIST = 21.3 Deg C Instrument (specify) 4-STAR = 21.4 Deg C
21.4 100907-10
100907-02 21.4

Calibration/verification readings:

pH: 4 = 4.01 4.01 Spec. Cond.: 1413 $\mu\text{S}/\text{cm}$ = 1413 $\mu\text{S}/\text{cm}$ 1413
 7 = 7.00 7.00
 10 = —
 Slope = 97.1 97.5

Turbidity: Low: 10 NTUs = 9.82 NTUs DI = 0.09
 Mid: 100 NTUs = 98.8 NTUs
 High: 800 NTUs = 802 NTUs

Temperature: NIST = 21.4 Deg C Instrument (specify) 4-STAR = 21.6 Deg C
100907-10
100907-02

Post-calibration readings:

pH: 4 = 3.99 4.01 Spec. Cond.: 1413 $\mu\text{S}/\text{cm}$ = 1419 $\mu\text{S}/\text{cm}$ 1417
 7 = 6.81 7.01
 10 = 9.68 10.03

Turbidity: Low: 10 NTUs = 9.96 NTUs DI = 0.24

13-0281

CAL of pH on 100907-10 did not pass post check.
 Calibrated 100907-02 and wrote results beside cal values for 100907-10.

Mid: 100 NTUs = 99.3 NTUs
High: 800 NTUs = 810 NTUs

Temperature: NIST = 21.6 Deg. C Instrument (specify) 100907-02 = 21.7 Deg C

End Check Readings: Date 4/2/13 Time 15:17

pH 4 Std. = 4.05 SUs

pH 7 Std. = 7.04 SUs

pH 10 Std. = 10.00 SUs

Spec Conductivity Low Std. = 1406 μ S/cm

Spec Conductivity High Std. = — μ S/cm

Turbidity Low Std. = 9.79 NTUs

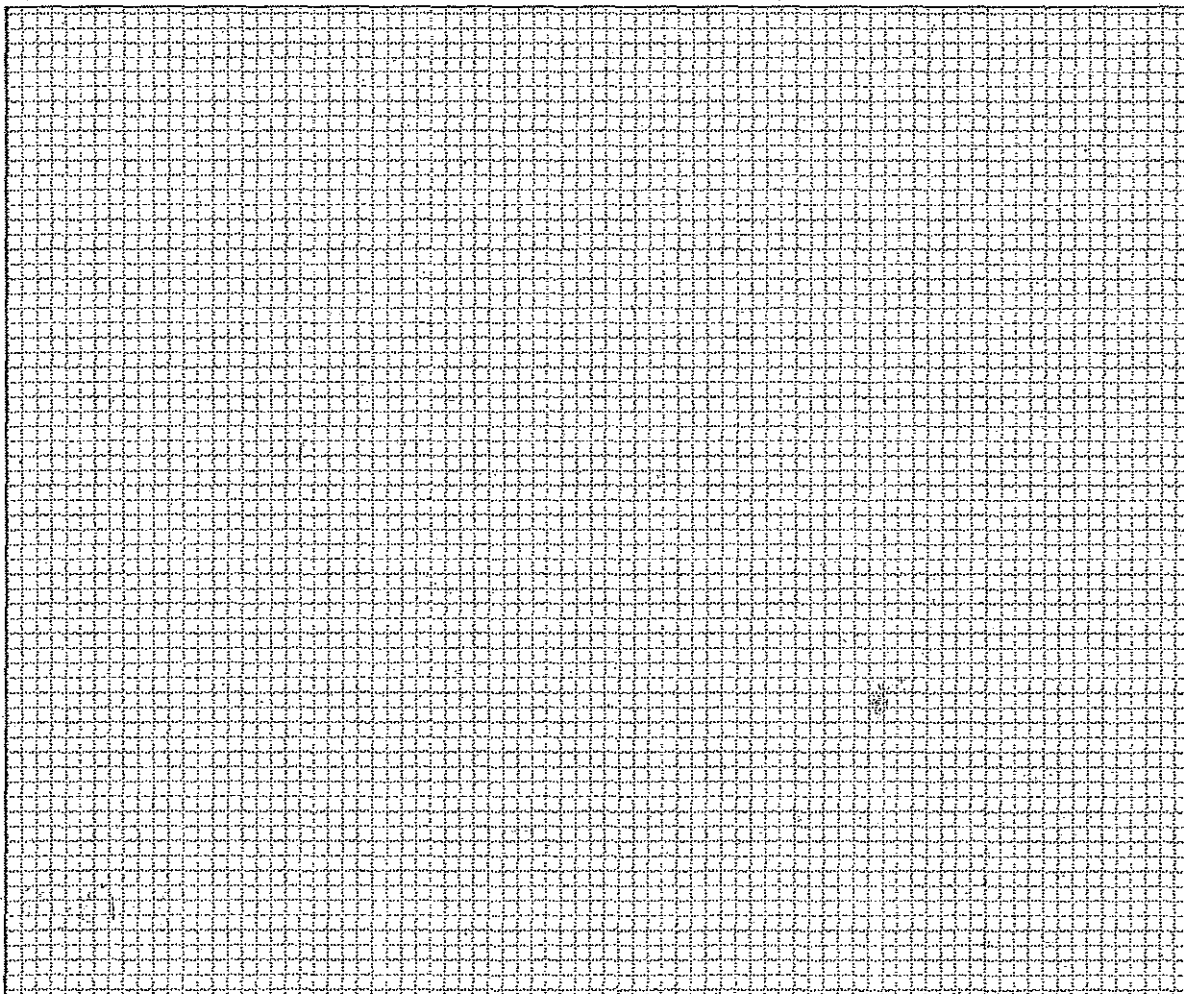
Turbidity Mid Std. = 97.9 NTUs

Turbidity High Std. = 792 NTUs

NIST Thermometer: 33.2 Deg. C Instrument 33.3 Deg. C

DI = 0.18

Notes (Other instruments/calibration standards):



13-0291

Instrument Calibration Log

Instrument _____ (pH, SC, Turbidity, Temperature) SESD ID No _____ Calibrator's Init. _____
 Instrument _____ (pH, SC, Turbidity, Temperature) SESD ID No _____
 Instrument _____ (pH, SC, Turbidity, Temperature) SESD ID No _____
 Instrument _____ (pH, SC, Turbidity, Temperature) SESD ID No _____

Calibration: Date _____ Time _____

pH 4 Std. Manufacturer: _____	Lot# _____	Expiration: _____
pH 7 Std. Manufacturer: _____	Lot# _____	Expiration: _____
pH 10 Std. Manufacturer: _____	Lot# _____	Expiration: _____
Spec Conductivity Low Std. _____ $\mu\text{S/cm}$	Manufacturer _____	Lot # _____, Exp. _____
Spec Conductivity High Std. _____ $\mu\text{S/cm}$	Manufacturer _____	Lot # _____, Exp. _____
Turbidity Low Std. Manufacturer _____	Lot # _____	Calibration Due: _____
Turbidity Mid Std. Manufacturer _____	Lot # _____	Calibration Due: _____
Turbidity High Std. Manufacturer _____	Lot # _____	Calibration Due: _____
NIST Thermometer: _____	Calibration Due: _____	

Pre-calibration readings:

pH: 4 = _____ Spec. Cond.: _____ $\mu\text{S/cm}$ = _____ $\mu\text{S/cm}$
 7 = _____ _____ $\mu\text{S/cm}$ = _____ $\mu\text{S/cm}$
 10 = _____
 Turbidity: Low: _____ NTUs = _____ NTUs
 Mid: _____ NTUs = _____ NTUs
 High: _____ NTUs = _____ NTUs
 Temperature: NIST = _____ Deg. C Instrument (specify) _____ = _____ Deg. C

Calibration/verification readings:

pH: 4 = _____ Spec. Cond.: _____ $\mu\text{S/cm}$ = _____ $\mu\text{S/cm}$
 7 = _____ _____ $\mu\text{S/cm}$ = _____ $\mu\text{S/cm}$
 10 = _____
 Slope = _____
 Turbidity: Low: _____ NTUs = _____ NTUs
 Mid: _____ NTUs = _____ NTUs
 High: _____ NTUs = _____ NTUs
 Temperature: NIST = _____ Deg. C Instrument (specify) _____ = _____ Deg. C

Post-calibration readings:

pH: 4 = _____ Spec. Cond.: _____ $\mu\text{S/cm}$ = _____ $\mu\text{S/cm}$
 7 = _____ _____ $\mu\text{S/cm}$ = _____ $\mu\text{S/cm}$
 10 = _____
 Turbidity: Low: _____ NTUs = _____ NTUs

Mid: _____ NTUs = _____ NTUs
High: _____ NTUs = _____ NTUs

Temperature: NIST = _____ Deg. C Instrument (specify) _____ = _____ Deg. C

End Check Readings: Date _____ Time _____

pH 4 Std. = _____ SUs

pH 7 Std. = _____ SUs

pH 10 Std. = _____ SUs

Spec Conductivity Low Std. = _____ $\mu\text{S}/\text{cm}$

Spec Conductivity High Std. = _____ $\mu\text{S}/\text{cm}$

Turbidity Low Std. = _____ NTUs

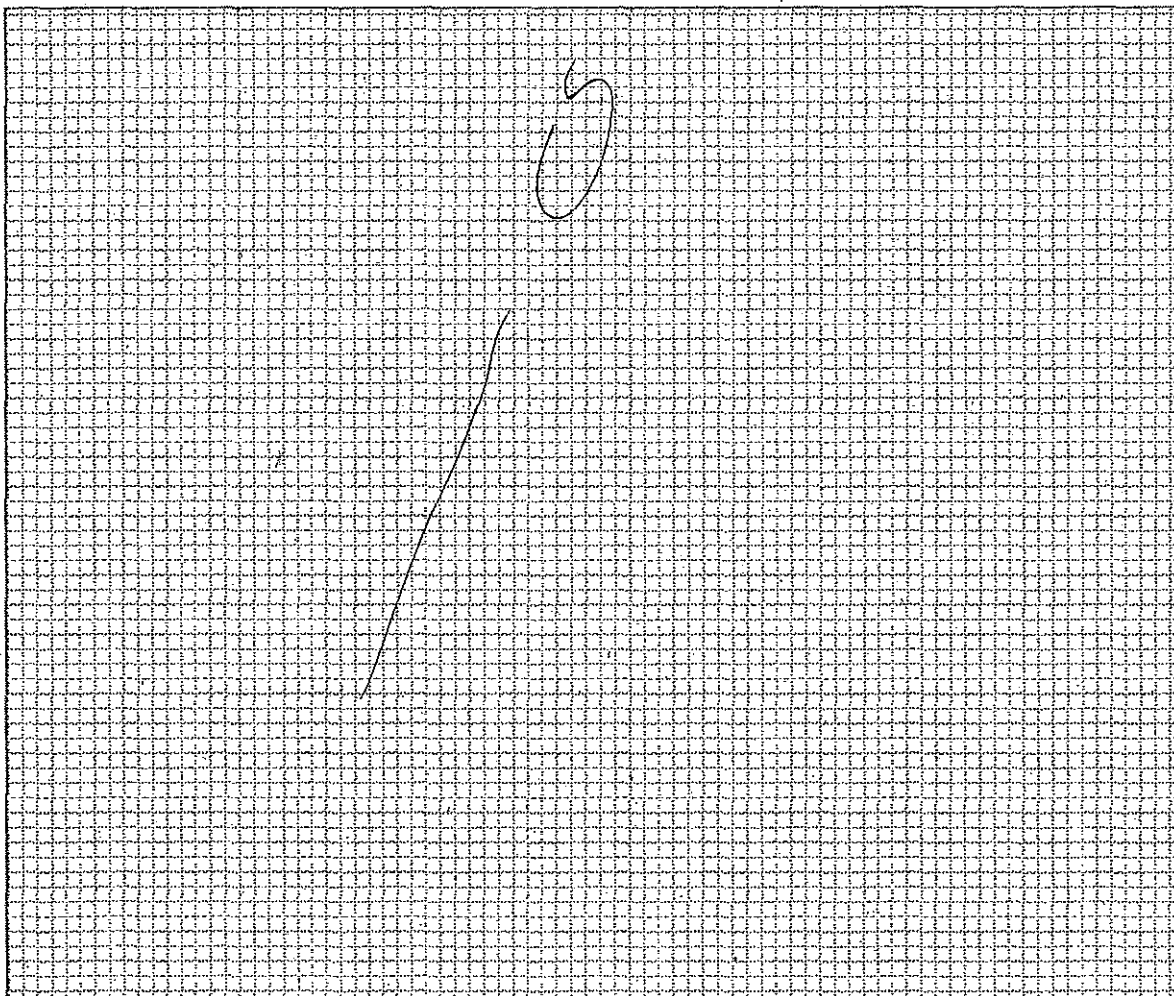
Turbidity Mid Std. = _____ NTUs

Turbidity High Std. = _____ NTUs

NIST Thermometer: _____ Deg. C Instrument _____ Deg. C

Notes (Other instruments/calibration standards):

fw
04-02-13



Date: 4-2-2013 Station ID: RW2 Sample ID: RW2-0402 ^{13 of 4/2/13}

Sample Team: Jairo Castillo or Init. _____
Don Forster or Init. _____
_____ or Init. _____

GPS Coordinates: Latitude: 26.19839° N Longitude 080.15250° W ^{199 per - 4-22-13}

Garmin ☒ Serial Number 073108-10 Accuracy 181 feet

Trimble ☐ SESD Instrument #: _____ Logged? ☒ or N ^{per 4-22-13}

File name and back-up location (laptop, thumb drive, etc.) _____

Description of sample location:

Southeast portion of building outside

SESD Operating Procedures: Check, as appropriate

Measurement Procedures:

3 ^{per}
SESDPROC-100-R2, Field pH Measurement ☒
SESDPROC-101-R2, Field Specific Conductance Measurement ☒
SESDPROC-102-R2, Field Temperature Measurement ☒
SESDPROC-103-R2, Field Turbidity Measurement ☒
SESDPROC-110-R2, Global Positioning System ☒ ^{per per}

Environmental/Waste Sampling Procedures:

SESDPROC-305-R1, Potable Water Supply Sampling ☐ ^{per}
SESDPROC-301-R2, Groundwater Sampling ☒ ^{per}
SESDPROC-513-R0, Pore Water Sampling ☐ ^{per}

Other Procedures, if applicable:

In screened Interval pumping and sampling

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

VOL sampling, Geo Pump, teflon tubing placed 20 ft in screened area

Description of Media Sample:

Groundwater, Dark gray color

Other pertinent information (weather conditions, etc.):

Sunny, Clear, 85°F

Filtered Sample: Yes or ☒ No If yes, Filter Type: _____ um (size)

Field Split: ☒ Yes or ☒ No ^{per 4/2/13} Split Sample ID, Date and Time: RW2D-0413 10:51

Well Diameter: 4 in. Calculations:
Well Depth 10-38 3/8 ft ^{per (screen)}
Water Level 3.18 ft ⁴⁻²²⁻²⁰¹³
Water Column ✓ ft
Purge Volume: 4.55 gallons ^(low-flow)

(Continued on next page)

13-0241
1 of 10

Continuation of sample RWZ-0413

Instrument Nos (i.e., #1, #2, #3, etc): *Orig 4 star / 2 100 Q*

pH ☒ Conductivity ☒ Temperature ☒ Turbidity ☒

NOTE: Key to instrument numbers and instrument calibration and field distribution information maintained in separate instrument calibration logbook.

Purge Parameters (continue on grid below, if necessary)					
Time	pH (S.U.s)	Spec. Cond. (μ mhos/cm)	Temp (° Cent.)	Turbidity (NTUs)	Notes
					Pump On
10:10	6.72	263.2	28.2	40.2	0.75 gal
10:19	6.74	265.2	28.2	39.2	1.5 gal
10:25	6.75	266.2	28.3	35.6	2.25 gal
10:30	6.75	265.8	28.2	34.4	3.25 gal
10:36	6.75	265.8	28.2	28.8	4.25 gal
10:43	6.78	264.9	28.5	28.8	4.50 gal
10:47	6.77	266.7	28.5	28.5	4.55 gal
					end
10:51					Sample Collection Time

Laboratory Analyses and containers (continue on grid below, if necessary):

Analyses	Container Type	Number of Containers	Preservation
V0 A	10m/Via Is	6 (3 per Dupp)	NONE
	/		
	9-2-13		

MS/MSD? Y or (N)

☒ All samples placed on ice/cooler checked for ice/water

Grid for sketch, continuations, photo logs, etc.

needed to remove a 3 in hose with a GrandFas Pump from the well. Hose was cover with a black oily substance.

13-0281
2 of 10

Date: 4/02/2013 Station ID: PMW3 Sample ID: PMW3-0402¹³ DP #213

Sample Team: Jairo Castillo or Init. _____
Don Forston or Init. _____
_____ or Init. _____

X GPS Coordinates: Latitude: N 26.19839° N Longitude: W 80.15250° W

Garmin ☒ Serial Number 073108-10 Accuracy 15 feet

Trimble ☐ SESD Instrument #: _____ Logged? Y or N

File name and back-up location (laptop, thumb drive, etc.) _____

Description of sample location:

South west portion of the main building outside parking area

SESD Operating Procedures: Check, as appropriate

Measurement Procedures:

SESDPROC-100-R2 Field pH Measurement ☒ for
SESDPROC-101-R2 Field Specific Conductance Measurement ☒ for
SESDPROC-102-R2 Field Temperature Measurement ☒ for
SESDPROC-103-R2 Field Turbidity Measurement ☒ for
SESDPROC-110-R2 Global Positioning System ☒ for

Environmental/Waste Sampling Procedures:

SESDPROC-305-R2 Potable Water Supply Sampling ☐ for
SESDPROC-301-R2 Groundwater Sampling ☒ for
SESDPROC-513-R2 Pore Water Sampling ☐ for

Other Procedures, if applicable:

for screened external sampling and sampling (at 20 ft)

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

Geo pump, 1/2" tubing, tubing placed top casing at 20 ft ~~BE~~ in screened area.

Description of Media/Sample:

Groundwater, orange dark color (dark amber) 9-02-03

Other pertinent information (weather conditions, etc.):

Sunny, clear 85°F

Filtered Sample: Yes or ☒ No If yes, Filter Type: _____, _____ um (size)

Field Split: Yes or ☒ No Split Sample ID, Date and Time: _____

Well Diameter: 1 in. Calculations:

Well Depth 30 ft

Water Level 4.01 ft

Water Column _____ ft

Purge Volume: 2.75 gallons (LOW flow)

(Continued on next page)

13-0281

3 of 10

Continuation of sample PMW 3-0413

Instrument Nos (i.e., #1, #2, #3, etc): ORION 4star / 2100 Q

pH ☒ Conductivity ☒ Temperature ☒ Turbidity ☒

NOTE: Key to instrument numbers and instrument calibration and field distribution information maintained in separate instrument calibration logbook.

Purge Parameters (continue on grid below, if necessary)					
Time	pH (S.U.s)	Spec. Cond. (µmhos/cm)	Temp (° Cent.)	Turbidity (NTUs)	Notes
					Pump On
11:30	6.10	236.5	28.6	73.4	0.25 gal
11:35	6.07	238.7	28.7	69.4	0.50 gal
11:41	6.06	239.9	28.8	71.9	0.75 gal
11:46	6.06	242.6	28.8	63.2	1.25 gal
11:53	6.06	245.2	28.7	59.1	1.50 gal
12:00	6.07	247.7	28.6	59.6	2.00 gal
12:07	6.07	248.8	28.7	50.9	2.5 gal
12:12	6.07	250.0	28.7	50.7	2.75 gal
					END
12:15					Sample Collection Time

12:15 PM

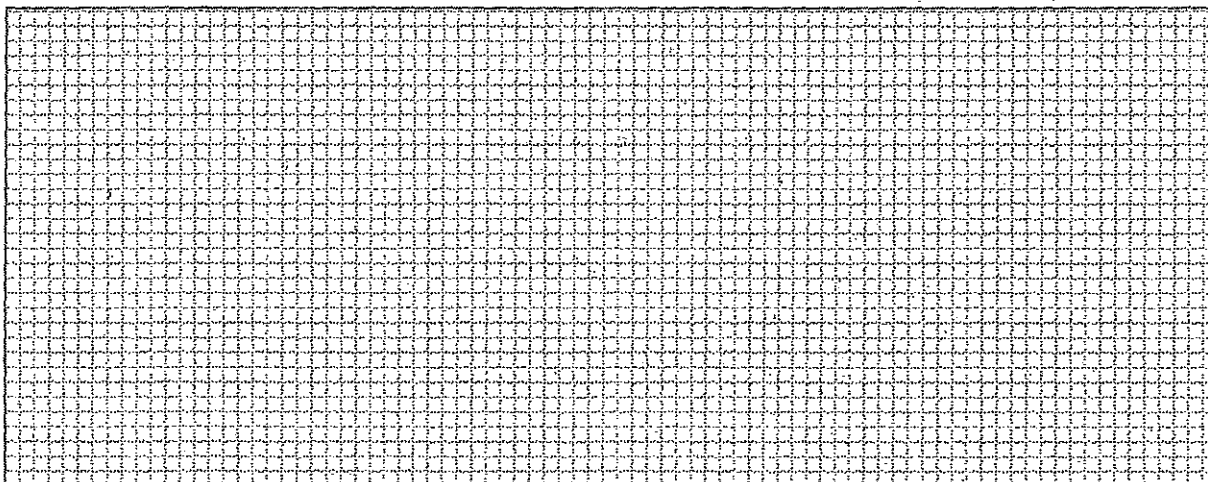
Laboratory Analyses and containers (continue on grid below, if necessary):

Analyses	Container Type	Number of Containers	Preservation
VOA	40 ml vials	6 (3 for MS/MSD)	NO/RQ

MS/MSD ☒ or N

☒ All samples placed on ice/cooler checked for ice/water

Grid for sketch, continuations; photo logs, etc.



13-0281

PMW-1 PMW1-0413
Date: 04/02 Station ID: PMW01 Sample ID: PMW01-0402 ^{Def 4/2/13}

Sample Team: Jairo Castillo or Init. _____
Jon Foster or Init. _____

x GPS Coordinates: Latitude: 26.19843 N Longitude 080.1984 W ^{15261° per-4-02-13}
Garmin ☒ Serial Number 073108-10 Accuracy 7 feet
Trimble ☐ SESD Instrument #: _____ Logged? Y or N
File name and back-up location (laptop, thumb drive, etc.) _____

Description of sample location:

Southwest portion outside the building (Revised well casing) inside the fence

SESD Operating Procedures: Check, as appropriate

Measurement Procedures:

SESDPROC-100-R2 ³ Field pH Measurement ☒ per 4-02-13
SESDPROC-101-R2 ³ Field Specific Conductance Measurement ☒ per 4-2-13
SESDPROC-102-R2 ³ Field Temperature Measurement ☒ per 4-2-13
SESDPROC-103-R2 ³ Field Turbidity Measurement ☒ per 4-2-13
SESDPROC-110-R2 ³ Global Positioning System ☒ per 4-2-13

Environmental/Waste Sampling Procedures:

SESDPROC-305-R1 ³ Potable Water Supply Sampling ☐ per 4-2-13
SESDPROC-301-R2 ³ Groundwater Sampling ☒ per 4-2-13
SESDPROC-513-R2 ³ Pore Water Sampling ☐ per 4-2-13

Other Procedures, if applicable:

In screened lateral low flow purging

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

Geo pump ST5732, reflow tubing, taking place @ 20' in screened area

Description of Media/Sample:

Groundwater, orange, amber dark color

Other pertinent information (weather conditions, etc.):

Clear, Sunny, 87°F

Filtered Sample: Yes or ☒ No If yes, Filter Type: _____ um (size)

Field Split: Yes or ☒ No Split Sample ID, Date and Time: _____

Well Diameter: 1 in. Calculations: _____

Well Depth 3.0 ft

Water Level 4.02 ft

Water Column 1 ft

Purge Volume: 3.75 gallons (Low Level Flow purging)

(Continued on next page)

per 4-02-2013

13-0281

8 of 10

Continuation of sample

PMW1-0413

PAN010402 of 4/2/13

Instrument Nos (i.e., #1, #2, #3, etc): ORION 4star /200Q

04-02-0013

pH ☒

Conductivity ☒

Temperature ☒

Turbidity ☒

for all for

10 0907-02

090310-06

NOTE: Key to instrument numbers and instrument calibration and field distribution information maintained in separate instrument calibration logbook.

Purge Parameters (continue on grid below, if necessary)

Time	pH (S.U.s)	Spec. Cond. (µmhos/cm)	Temp (° Cent.)	Turbidity (NTUs)	Notes
					Pump On
13:30	5.82	265.3	28.7	67.0	less than 0.25 gal
13:35	5.81	258.6	28.8	47.7	0.75 gal
13:43	5.82	254.8	28.6	50.9	1.5 gal
13:50	5.82	254.5	28.6	61.1	2.5 gal
13:55	5.93	256.8	28.6	55.0	2.75 gal
14:00	5.82	255.2	28.7	54.7	3.00 gal
14:06	5.82	254.3	28.6	54.5	3.5 gal
14:11	5.84	254	29.0	55.3	3.75 gal
14:15					2.00 gal
					Sample Collection Time

for 13 for

Time: 14:15

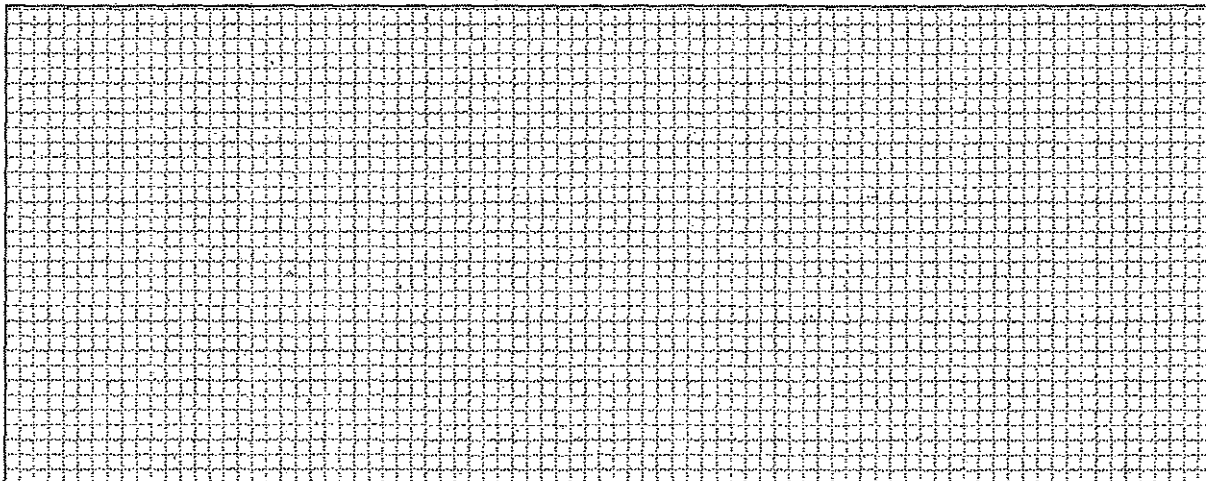
Laboratory Analyses and containers (continue on grid below, if necessary):

Analyses	Container Type	Number of Containers	Preservation
VOA	40 mL Vials	3	NONE

MS/MSD? Y or N

[☒ All samples placed on ice/cooler checked for ice/water

Grid for sketch, continuations, photo logs, etc.



13-0781

6 of 10

Continuation of sample for 4-2-2013 RW 07-0402 4/11/13 4-2-13

Instrument Nos (i.e., #1, #2, #3, etc): ORION 4 Star / 2100 R

pH ✓ Conductivity ✓ Temperature ✓ Turbidity ✓

✓ 100907-02

✓ 090310-06

NOTE: Key to instrument numbers and instrument calibration and field distribution information maintained in separate instrument calibration logbook.

Purge Parameters (continue on grid below, if necessary)					
Time	pH (S.U.s)	Spec. Cond. (µmhos/cm)	Temp (° Cent.)	Turbidity (NTUs)	Notes
					Pump On
14:30	6.82	382	28.9	25.2	0.25 gal
14:36	6.89	381	29.0	31.6	0.75 gal
14:41	6.88	384	29.2	28.2	1.25 gal
14:46	6.89	383	29.2	28.2	1.50 gal
14:52	6.89	383	29.2	28.0	2.50 gal
14:58	6.88	383	28.9	25.2	3.09 gal
					END
14:01					Sample Collection Time

for
4-2-13

Laboratory Analyses and containers (continue on grid below, if necessary):

Analyses	Container Type	Number of Containers	Preservation
<u>✓ 0.4</u>	<u>40 ml Vials</u>	<u>3</u>	<u>NONE</u>

MS/MSD? Y or (N)

[✓] All samples placed on ice/cooler checked for ice/water

Grid for sketch/continuations, photo logs, etc.

Needed to remove a 3 in Hose with a Grandfos pump installed, from the well. Hose was cover with a black oily substance.

13-0281

8 of 10

Date: 4/2/13 Station ID: #R4DART# Sample ID: TB01-0413

Sample Team: _____ or Init. JL

or Init. _____

or Init. _____

GPS Coordinates: Latitude: _____ N Longitude _____ W

Garmin [] Serial Number _____ Accuracy _____ feet

Trimble [] SESD Instrument #: _____ Logged? Y or N

File name and back-up location (laptop, thumb drive, etc.) _____

Description of sample location:

Trip Blank

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures:

- SESDPROC-100-R2, Field pH Measurement []
- SESDPROC-101-R2, Field Specific Conductance Measurement []
- SESDPROC-102-R2, Field Temperature Measurement []
- SESDPROC-103-R2, Field Turbidity Measurement []
- SESDPROC-110-R2, Global Positioning System []

Environmental/Waste Sampling Procedures:

- SESDPROC-305-R1, Potable Water Supply Sampling []
- SESDPROC-301-R2, Groundwater Sampling []
- SESDPROC-513-R0, Pore Water Sampling []

Other Procedures, if applicable:

N/A

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

Description of Media/Sample:

Trip Blank

Other pertinent information (weather conditions, etc.):

N/A

Filtered Sample: Yes or No If yes, Filter Type: _____, _____ um (size)

Field Split: Yes or No Split Sample ID, Date and Time: _____

Well Diameter: _____ in.

Calculations:

Well Depth _____ ft

Water Level _____ ft

Water Column _____ ft

Purge Volume: _____ gallons

(Continued on next page)

13-0281
9 of 10

Continuation of sample TB01-0413

Instrument Nos (i.e., #1, #2, #3, etc):

pH _____ Conductivity _____ Temperature _____ Turbidity _____

NOTE: Key to instrument numbers and instrument calibration and field distribution information maintained in separate instrument calibration logbook.

Purge Parameters (continue on grid below, if necessary)					
Time	pH (S.U.s)	Spec. Cond. (µmhos/cm)	Temp (° Cent.)	Turbidity (NTUs)	Notes
					Pump On
15:05					Sample Collection Time

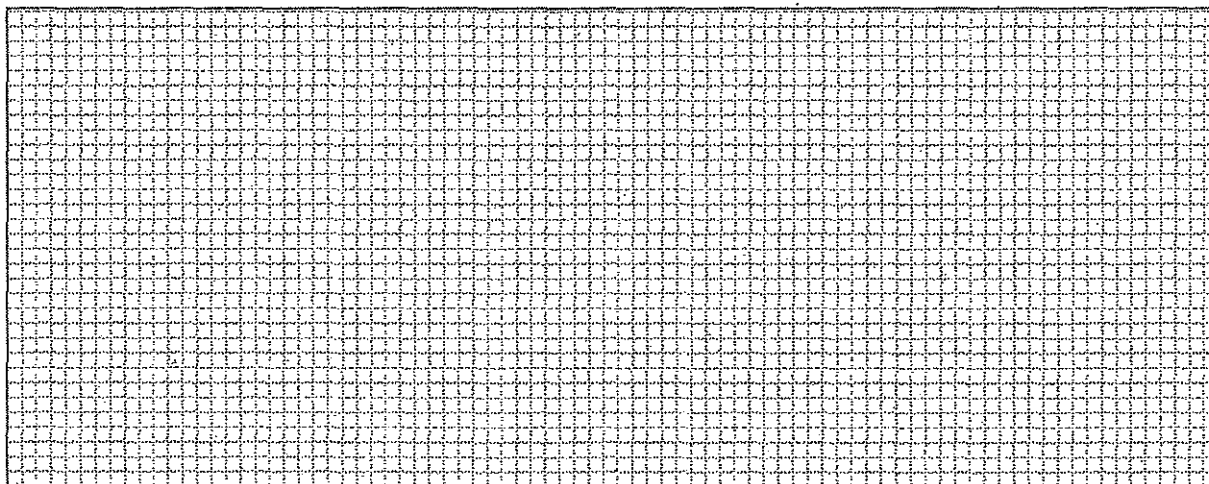
Laboratory Analyses and containers (continue on grid below, if necessary):

Analyses	Container Type	Number of Containers	Preservation
VOC	40 ml vials	3	None

MS/MSD? Y or ☒ N

☒ All samples placed on ice/cooler checked for ice/water

Grid for sketch, continuations, photo logs, etc.



13-028
10 of 10

Date: _____ Station ID: _____ Sample ID: _____

Sample Team: _____ or Init. _____

_____ or Init. _____

_____ or Init. _____

GPS Coordinates: Latitude: _____ N Longitude _____ W

Garmin [] Serial Number _____ Accuracy _____ feet

Trimble [] SESD Instrument #: _____ Logged? Y or N

File name and back-up location (laptop, thumb drive, etc.) _____

Description of sample location: _____

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures:

SESDPROC-100-R2, Field pH Measurement []

SESDPROC-101-R2, Field Specific Conductance Measurement []

SESDPROC-102-R2, Field Temperature Measurement []

SESDPROC-103-R2, Field Turbidity Measurement []

SESDPROC-110-R2, Global Positioning System []

Environmental/Waste Sampling Procedures:

SESDPROC-305-R1, Potable Water Supply Sampling []

SESDPROC-301-R2, Groundwater Sampling []

SESDPROC-513-R0, Pore Water Sampling []

Other Procedures, if applicable: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate): _____

Description of Media/Sample: _____

Other pertinent information (weather conditions, etc.): _____

Filtered Sample: Yes or No *Yes* 4-2-13 If yes, Filter Type: _____, _____ um (size)

Field Split: Yes or No Split Sample ID, Date and Time: _____

Well Diameter: _____ in. Calculations: _____

Well Depth _____ ft

Water Level _____ ft

Water Column _____ ft

Purge Volume: _____ gallons

(Continued on next page)

NOTE: Key to instrument numbers and instrument calibration and field distribution information maintained in separate instrument calibration logbook.

[illegible]

Laboratory Analyses and containers (continue on grid below, if necessary):

[illegible]

MS/MSD? Y or N

1 All samples placed on ice/cooler checked for ice/water

Grid for sketch, continuations, photo logs, etc.

4-2-13

A full-page view of a blank sheet of graph paper. The paper features a uniform grid of small squares, typical of standard graph paper used for mathematics or engineering. The grid covers the entire area of the page, with no margins or additional markings visible.

END OF REPORT